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ALAN ISRAEL  
KRISCHSTEIN OTTINGER ISRAEL & SCHIFFMILLER, P.C.  
489 FIFTH AVENUE  
NEW YORK, NY 10017-6105

EXAMINER

HESS, DANIEL A

ART UNIT	PAPER NUMBER
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2876

DATE MAILED: 06/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/756,438

Applicant(s)

KRICHEVER ET AL

Examiner

Daniel A Hess

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 15-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 16
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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# 1. DETAILED ACTION

2. Receipt is acknowledged of amendment dated 4 16 2003, which has been placed in the file of record, and to which this action is a reply.

## *Remarks*

3. This action is made final. The 'Response to Arguments' section below details the examiner's views.

4. On a more general basis, this examiner holds that since (a) the technology and benefits of a two window / two direction barcode reader is old and well-known and since (b) the technology and benefits of two dimensional / CCD capture for code reading is well known, it is obvious to combine (a) and (b). One would be motivated to combined (a) and (b) to achieve the benefits of (a), including greater odds of image capture, in addition to the benefits of (b), such as handling complex indicia.

5. Ohkawa teaches (a) and Bunte teaches (b). ***To be able to make the replacement, one must just recognize that the 2-D imaging of Bunte is not only the camera by itself, but also the accompanying optics.***

## ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 15, 16, 18, 20-22, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkawa et al. (US 5,936,218) in view of Bunte et al. (US 6,330,975).

Re claims 15 and 16: Ohkawa shows (column 3, lines 38-39; column 8, lines 64-65) a bar code scanner having a bottom window 5 and a side window 4 (see figure 2A). There is also (see figure 6) a first detector 28 and a mirror directing light to the detector (30). Similarly, there is a bottom mirror 33 directing light to a second detector 29. Viewing figure 20 (sheet 30) one notes that detectors 28 and 29 each capture a separate image coming from a different direction as can be seen by the arrows indicating the different light paths. There are two separate views of the scanned object 25. For each view, there is a separate illuminator and detector.

Ohkawa fails to show that each of the two images captured is a 2-dimensional image.

Bunte has (column 1, lines 30-45) a detector which captures and processes coded images. There is further a display means which displays captured images immediately after capture (column 5, lines 30-44). Bunte further shows (see figure 6b; column 14, lines 20-30) an illumination light source. Also, there is a CCD detector system (column 18, lines 38-45).

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In view of Bunte's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the photodiode detector system of Ohkawa with the old and well-known detector system of Bunte which captures coded images and then displays them because this allows the user to determine that scanner has the scanned item within its field of view. Bunte emphasizes this motive (column 3, lines 30-40). Additionally, image capture permits offsite decoding if the decode operation is especially computationally intensive (column 3, lines 48-50).

9. In order for this replacement to work, the examiner wishes to make explicitly clear that a **refitting** of the detection **system** would occur in a replacement of Ohkawa's detectors with Bunte's. One of ordinary skill in the art would have known that the applying Bunte to Ohkawa implies that the optical system needs to be refitted to accommodate imaging, for the obvious reason that a point cannot be imaged, and this refitting to capture an image rather than a point is very old and well known in the art, as exemplified by a basic camera. The scanning line laser light source would be replaced by a simple, incoherent source and optics would be used to direct an image not a point, onto a CCD array.

Re claim 18: Bunte shows (column 18, lines 40-45) that the imager can be a CCD array. It is understood in the art that a CCD array is typically arranged in orthogonal rows and columns.

Re claim 20: Bunte has a signal detector and correspondingly has a single display. With two detectors as per the substitution discussed above, two imagers would be appropriate to complete the substitution.

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Re claim 21: Ohkawa has a decoder circuit (column 12, lines 1-10) which decodes sensed optical signals. Ohkawa doesn't specifically discuss decoding of sensed *images* as per Ohkawa modified by Bunte in claim 1. However, in order to retrieve barcode data as a barcode reader does, it must inherently have some kind of decoding means.

Re claim 22: As seen in Ohkawa (column 12, lines 1-10) there is just one decoder circuit. Therefore decode operations must occur in sequence. To perform decoding in parallel, by definition more than one decoding means must be present.

Re claim 24: In Ohkawa as figure 3 shows, these folding mirrors are present.

Re claim 25: Ohkawa fails to teach or suggest scanning of 2D barcodes.

Bunte contemplates (column 7, lines 30-35) using his scanning system for 2D barcodes.

In view of Bunte's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known 2D barcode scanning as taught by Bunte into the teachings of Ohkawa because 2D barcodes store more information and therefore permit more detailed product descriptions, which can allow for improved sales data or better information supplied to the customer on their receipts.

10. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkawa as modified by Bunte as applied to claim 15 above, and in further view of Rando et al. (US 5,723,852). The teachings of Ohkawa as modified by Bunte have been discussed above.

Ohkawa as modified by Bunte fails to show or fairly suggest two separate light sources.

Rando has a device for scanning from two sides (column 7, lines 28-36). He has (figure 6A) multiple laser light sources 65a-65d.

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In view of Rando's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known multiple laser light sources in a scanner with multiple scanning surfaces and directions as taught by Rando into the teachings of Ohkawa as modified by Bunte because as Rando notes (column 9, lines 30-40) one laser source is used for scanning features greater than a certain size, another different laser source is used for scanning features less than a given size.

11. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkawa as modified by Bunte as applied to claim 15 above, and in further view of Katoh et al. (US 5,801,370). The teachings of Ohkawa as modified by Bunte have been discussed above.

Ohkawa as modified by Bunte fails to show that the two windows are at right angles to on another.

Katoh shows (see figure 3a) a bioptic scanner where the angle between the two scanning surfaces is a right angle.

In view of Katoh's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known right angle between the two scanning surfaces as taught by Katoh into the teachings of Ohkawa as modified by Bunte because in certain environments this type of design may leave more available space.

12. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkawa as modified by Bunte as applied to claim 21 above, and in further view of Wang (US 5,914,477). The teachings of Ohkawa as modified by Bunte have been discussed above.

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Ohkawa as modified by Bunte fails to show parallel decoding.

Wang (column 6, lines 20-22) refers to 'high speed parallel decoding.'

In view of Wang's teachings, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known parallel decoding of barcode reads into the teachings of Ohkawa as modified by Bunte because as Wang notes, it is 'high speed,' which is especially desirable in the setting of a supermarket checkout, where customers lose time if checkout processing is slow.

13. Claims 26-31 and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katoh et al. (US 5,801,370) in view of Bunte and Tang et al. (US 5,886,336).

Katoh has a multidirectional barcode scanning device (title) in which there are (see figures 3a and 3b) windows 13a and 13b angled with respect to one another. Folding mirrors 21a and 21b fold the beam for windows 13a and 13b respectively (figure 3b). There are (column 4, line 55) light receiving elements associated with each window. There is (column 4, lines 10-15) a rotatable mirror. This mirror 12 (column 5, lines 30-35) can also be seen to rotate through a curved arrow in figure 3b. Webster's defines 'to image' as 'to represent symbolically,' therefore any barcode scanner which represents the barcode as some kind of data, including Katoh's, is an imager.

Katoh fails to show that each of the two images captured is a 2-dimensional image.

Bunte has (column 1, lines 30-45) a detector which captures and processes coded images. There is further a display means which displays captured images immediately after capture (column 5, lines 30-44).



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In view of Bunte's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the photodiode detector system of Katoh with the old and well-known detector system of Bunte which captures coded images and then displays them because this allows the user to determine that scanner has the scanned item within its field of view. Bunte emphasizes this motive (column 3, lines 30-40). Additionally, image capture permits offsite decoding if the decode operation is especially computationally intensive (column 3, lines 48-50).

In order for this replacement to work, the examiner wishes to make explicitly clear that a **refitting** of the detection **system** would occur in a replacement of Katoh's detectors with Bunte's. One of ordinary skill in the art would have known that the applying Bunte to Katoh implies that the optical system needs to be refitted to accommodate imaging, for the obvious reason that a point cannot be imaged, and this refitting to capture an image rather than a point is very old and well known in the art, as exemplified by a basic camera. The scanning line laser light source would be replaced by a simple, incoherent source and optics would be used to direct an image not a point, onto a CCD array.

Katoh as modified by Bunte fails to show interlacing of data being sent to a single detector from two different sources.

Tang shows (column 4, lines 8-16 and 25-43) a spinning mirror for receiving data from different beams and directions to a single detector 42 (see figure 2). This data must be interlaced (i.e. must have 2 different types of data alternating) because data comes from two sources into one location.

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In view of Tang's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known moving mirror for producing interlaced data as taught by Tang into the teachings of Katoh this configuration permits multi-direction scanning with just one detecting and decoding means rather than two, thereby reducing the cost of the device.

Re claims 27 and 28: Katoh shows a slot scanner with a right angle between the windows.

Re claim 29: Bunte shows (column 18, lines 40-45) that the imager can be a CCD array. It is understood in the art that a CCD array is typically arranged in orthogonal rows and columns.

Re claim 31: As seen in Katoh (column 9, lines 22-28) there is just one decoder circuit. Therefore decode operations must occur in sequence. To perform decoding in parallel, by definition more than one decoding means must be present.

Re claim 33: In Katoh as figure 3 shows, these folding mirrors are present.

Re claim 34: Katoh fails to teach or suggest scanning of 2D barcodes.

Bunte contemplates (column 7, lines 30-35) using his scanning system for 2D barcodes.

In view of Bunte's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known 2D barcode scanning as taught by Bunte into the teachings of Katoh because 2D barcodes store more information and therefore permit more detailed product descriptions, which can allow for improved sales data or better information supplied to the customer on their receipts.

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14. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Katoh as modified by Ohkawa and Bunte as applied to claim 26 above, and further in view of Wang (US 5,914,477). The teachings of Katoh as modified by Ohkawa and Bunte have been discussed above.

Katoh as modified by Ohkawa and Bunte fails to show parallel decoding.

Wang (column 6, lines 20-22) refers to 'high speed parallel decoding.'

In view of Wang's teachings, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known parallel decoding of barcode reads into the teachings of Katoh as modified by Ohkawa and Bunte because as Wang notes, it is 'high speed,' which is especially desirable in the setting of a supermarket checkout, where customers lose time if checkout processing is slow.

#### ***Response to Amendment***

15. The amendments are addressed, although they are not believed to represent major changes in the scope of the claimed subject matter.

#### ***Response to Arguments***

16. The applicant's essential argument is that an impermissible 'overhauling' of the system takes place to accommodate Bunte's camera-type imaging.

17. The examiner disagrees with the applicant, because in incorporating Bunte's imaging, one can simply take the camera-applicable optics from Bunte as an entire set. In other words,

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one skilled in the art would not be required to take individual elements piecemeal until a working system is achieved. The optics of Bunte are an essential part of the two-dimensional scanning system of Bunte. One does not have to 'gather' various 2-D optical elements in order to 'make the system work' for Ohkawa. One needs only to regard the 2-D optics of Bunte as a *package* to replace each of the two instances of 1-D optics in Ohkawa.

Why is one motivated to regard the two-D optics of Bunte as a package?

Because if we take just a CCD camera alone, it does not function, but as a package with its respective optics it will function just fine.

18. Also, one must note that as Ohkawa has two sets of detection systems, a replacement with a 2-D detection system would occur twice.

### ***Conclusion***

19. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

20. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

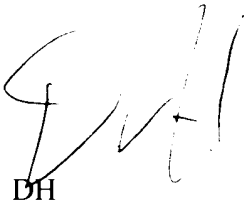
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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel A Hess whose telephone number is (703) 305-3841. The examiner can normally be reached on 8:00 AM - 5:00 PM M-F.

22. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G Lee can be reached on (703) 305-3503. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

23. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



DH

June 13, 2003

Daniel A Hess  
Examiner  
Art Unit 2876



THIEN M. LE  
PRIMARY EXAMINER